We Claim:

1. A connecting piece for carbon material electrodes, comprising: a connecting piece body, carbon fibers in said connecting piece body, said carbon fibers having oxidatively activated surfaces, and an added carbonized coating, said carbonized coating being a carbonization product of a coating material selected from the group consisting of wax, pitch, natural resins, thermoplastic polymers, and thermosetting polymers.

2. The connecting piece according to claim 1, wherein said carbon fibers have a modulus of elasticity of from 200 to 250 GPa.

3. The connecting piece according to claim 1, wherein said carbon fibers have a linear coefficient of thermal expansion of from −0.5 to +0.1 μm/(K·m) in a direction parallel to a lateral surface thereof, and from 1.7 to 2.1 μm/(K·m) in a normal plane orthogonal thereto.

4. The connecting piece according to claim 1, wherein said carbon fibers have an average length of from 0.5 to 40 mm.

5. The connecting piece according to claim 1, wherein a mass fraction of said carbon fibers in said connecting piece body is from 0.2 to 10%.

6. The connecting piece according to claim 1, wherein a mass fraction of said carbonized coating on said carbon fibers, based on a mass of said carbon fibers, is from 0.2 to 15%.

7. The connecting piece according to claim 1, wherein said carbon fibers are fibers based on polyacrylonitrile.

8. The connecting piece according to claim 1, wherein said carbon fibers are disposed in a form selected from the group consisting of parallel filaments, woven fabrics, layered fabrics, warp-knitted fabrics, knitted fabrics, and nonwoven fabrics.

9. A method of producing connecting pieces for carbon material electrodes, the method which comprises:

activating surfaces of carbon fibers by oxidation in a first step;

subsequently coating the carbon fibers with a surface coating of a coating material selected from the group consisting of

wax, pitch, natural resins, thermoplastic polymers, and thermosetting polymers, to form coated fibers;

optionally treating the coated fibers at a temperature of between 750 and 1,300°C for carbonization of the coating;

mixing the fibers with coke having a mean particle size in a range from 0.05 to 4 mm, with pitch having a softening temperature in a range from 70°C to 150°C, and optionally with further additives, and shaping into substantially cylindrical form bodies;

carbonizing and then graphitizing the substantially cylindrical form bodies; and

turning the graphitized form bodies to form connecting pieces with threads.

10. The method according to claim 9, which comprises using carbon fibers in a form of a fiber tow comprising from 1000 to 60,000 individual filaments, and, prior to the mixing step, cutting the fibers to form short fibers having an average length of from 0.5 to 40 mm.

11. The method according to claim 9, which comprises using carbon fibers in a form of heavy tow fibers comprising from 40,000 to 2,000,000 individual filaments and, prior to the

mixing step, cutting the heavy tow to form short fibers having an average length of from 0.5 to 40 mm.

12. The method according to claim 9, which comprises activating the carbon fibers in an aqueous bath containing an oxidizing agent.

13. The method according to claim 9, which comprises activating the carbon fibers in an aqueous bath by anodic oxidation.

14. The method according to claim 9, which comprises activating the carbon fibers in a gas stream containing an oxidizing agent.

15. The method according to claim 9, wherein the coating step comprises coating the activated carbon fibers in an aqueous or solvent-containing bath containing a dispersion or solution of a coating material selected from the group consisting of wax, pitch, natural resins, thermoplastic polymers, and thermo-setting polymers.

16. The method according to claim 9, which comprises treating the coated carbon fibers at a temperature of from 900 to 1,200°C for carbonization of the coating.

17. The method according to claim 9, wherein the mixing step comprises preparing a mixture containing for each 100 kg of coke, from 10 to 40 kg of a pitch, and from 0.2 to 20 kg of carbon fibers.

18. The method according to claim 17, which comprises adding from 0.1 to 1 kg of an iron oxide pigment having a mean particle size of from 0.1 to 2 μm as a further additive.